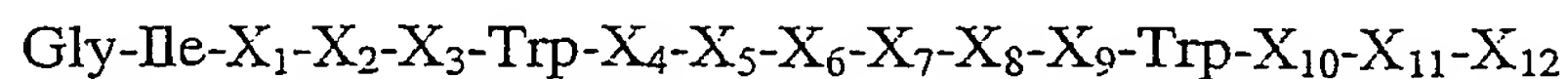# CLAIMS

What is claimed is:

1.   A peptide which comprises a subsequence: SRFEVW (SEQ ID NO: 22).

2.   A peptide in accordance with claim 1, comprising the formula: X_4-X_3-X_2-X_1-X_5-X_6, where

X_1 is SRFEVW,

X_2 is WI,

X_3 is GIVRK,

X_4 is EN,

X_5 is PYL, and

X_6 is KK,

wherein the peptide comprises X_1 and optionally at least one of X_2, X_3, X_4, X_5 and X_6, and if

any of X2, X_3, X_4, X_5 and X_6 are present, the amino acids are identical in their respective

positions to those in ENGIVRKWISRFEVWPYLKK (SEQ ID NO: 24)

as set forth in Figure 1B.

3.   A peptide of claim 1 which is up to 100 amino acids in length.

4.   A peptide of claim 1, wherein the peptide is at least 80% homologous with a

portion of native *Zea mays* protein sequence as set forth in GenBank Accession Number

1498382, and said homology is over the entire length of the peptide; or,

     wherein said peptide causes 50% bundled actin and inhibits actin

depolymerization when polymerized in vitro with actin at a molar ratio of 100 to 1; or,

     wherein the peptide is at least 80% homologous with a portion of native *Zea*

mays protein sequence as set forth in GenBank Accession Number 1498382, and said

homology is over the entire length of the peptide, and wherein said peptide causes actin

bundling and inhibits actin depolymerization when polymerized in vitro with actin.

5.   A peptide having the sequence E-GI*- - -W- - - - - -W, where, I* means I or
V, - means any amino acid, wherein said peptide causes actin bundling and inhibits actin
depolymerization.

6.   A peptide in accordance with claim 5, comprising a sequence:
EH*GIV*R*-W- - - - - V* W, where H* means H or a conservative substitution therefore,
V* means V or a conservative substitution therefore, and R* means R or a conservative
substitution therefore, and - means any amino acid, wherein said peptide causes actin
bundling and inhibits actin depolymerization.

7.   A peptide in accordance with claim 6, wherein the peptide causes 50%
bundled actin and inhibits actin depolymerization when polymerized in vitro with actin.

8.   A peptide in accordance with claim 7, wherein the peptide is polymerized with
actin at a molar ratio of peptide to actin of at least 100:1.

9.   A peptide of claim 5, wherein the sequence comprises SEQ ID NO: 12.

5.   A peptide having the sequence E-GI*- - -W- - - - - -W, where, I* means I or V, - means any amino acid, wherein said peptide causes actin bundling and inhibits actin depolymerization.

6.   A peptide in accordance with claim 5, comprising a sequence: EH*GIV*R*-W- - - - - V* W, where H* means H or a conservative substitution therefore, V* means V or a conservative substitution therefore, and R* means R or a conservative substitution therefore, and - means any amino acid, wherein said peptide causes actin bundling and inhibits actin depolymerization.

7.   A peptide in accordance with claim 6, wherein the peptide causes 50% bundled actin and inhibits actin depolymerization when polymerized in vitro with actin.

8.   A peptide in accordance with claim 7, wherein the peptide is polymerized with actin at a molar ratio of peptide to actin of at least 100:1.

9.   A peptide of claim 5, wherein the sequence comprises SEQ ID NO: 12.

10.   A peptide comprising at least 16 contiguous amino acids in accordance with

the formula:

$$Gly\text{-}Ile\text{-}X_1\text{-}X_2\text{-}X_3\text{-}Trp\text{-}X_4\text{-}X_5\text{-}X_6\text{-}X_7\text{-}X_8\text{-}X_9\text{-}Trp\text{-}X_{10}\text{-}X_{11}\text{-}X_{12}$$

or a pharmaceutically acceptable salt thereof, wherein

X_1 is Ile,Val, or Leu;

X_2 is Arg, Lys, Asn, or Thr;

X_3 is Arg, Lys, Asn, or Asp;

X_4 is Ile, Asp, Asn, or Glu;

X_5 is Ser or Asp;

X_6 is Arg, Met, or Ala;

X_7 is Phe or Glu;

X_8 is Asp, Glu, Lys, Arg, or His;

X_9 is Val or Ile;

X_{10} is Pro or His;

X_{11} is Tyr or His; and

X_{12} is Leu or Thr;

wherein the addition of said compound results in about 50% of bundled actin
in a molar fraction of peptide to actin of at least 100 to 1.